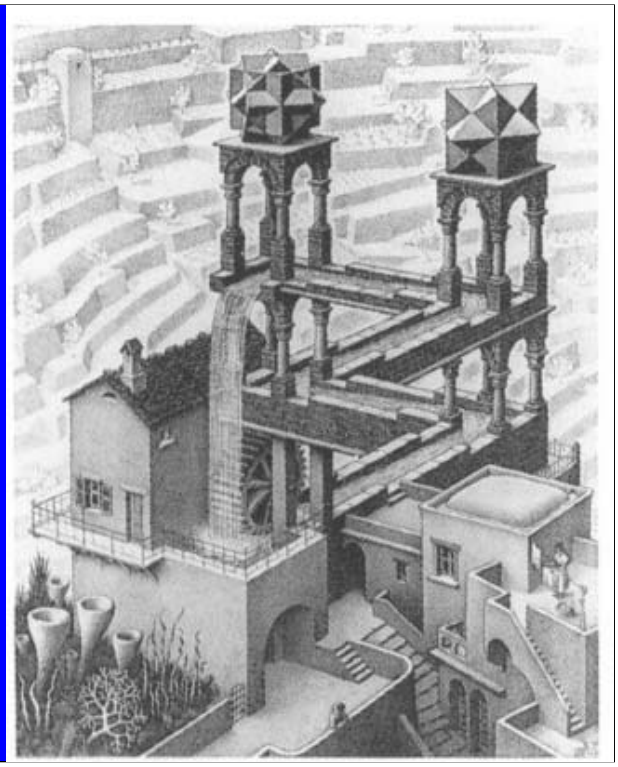
TMDL Workshop

Land Use Analysis for Watershed Planning

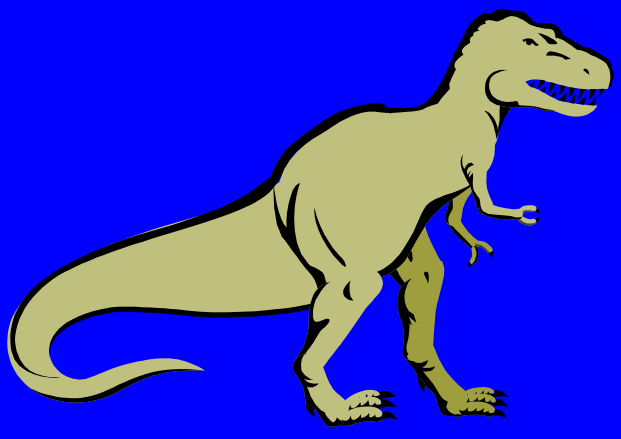


Watershed Planning:

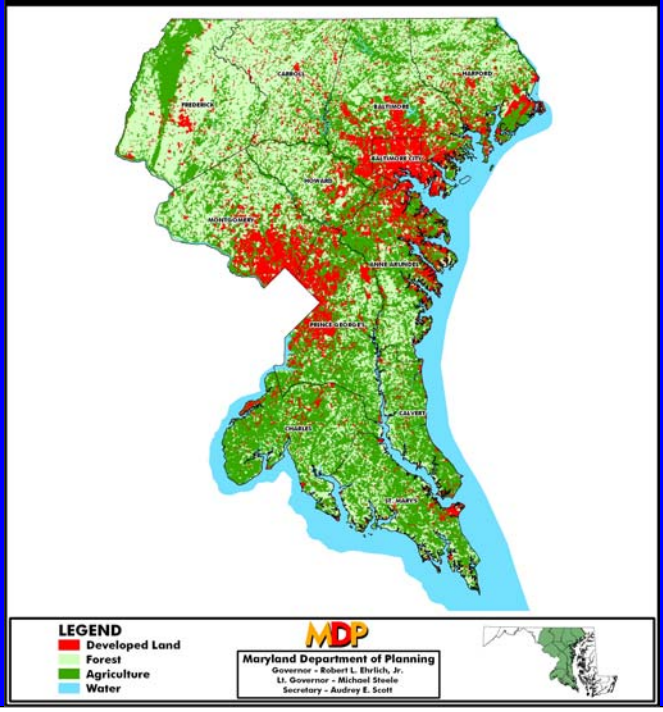
Land Use Matters!
(i.e., the world isn't flat)

- Density
- Location
- Sewer vs. Septic
- Site Design and BMPs

Where We've Been



CENTRAL MARYLAND 1973 LAND USE / LAND COVER



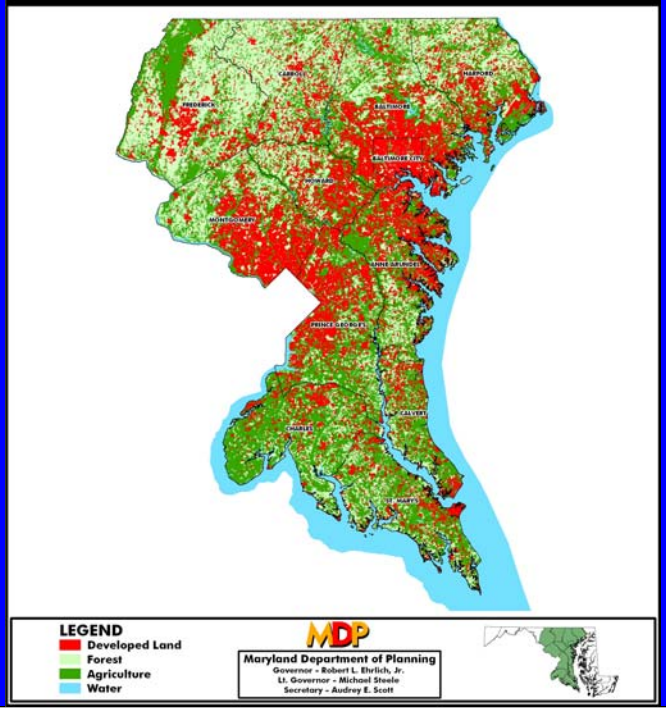
LEGEND

- Developed Land
- Forest
- Agriculture
- Water

MDP

Maryland Department of Planning
Governor - Robert L. Ehrlich, Jr.
Lt. Governor - Michael Steele
Secretary - Audrey E. Scott

CENTRAL MARYLAND 2002 LAND USE / LAND COVER



LEGEND

- Developed Land
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Governor - Robert L. Ehrlich, Jr.
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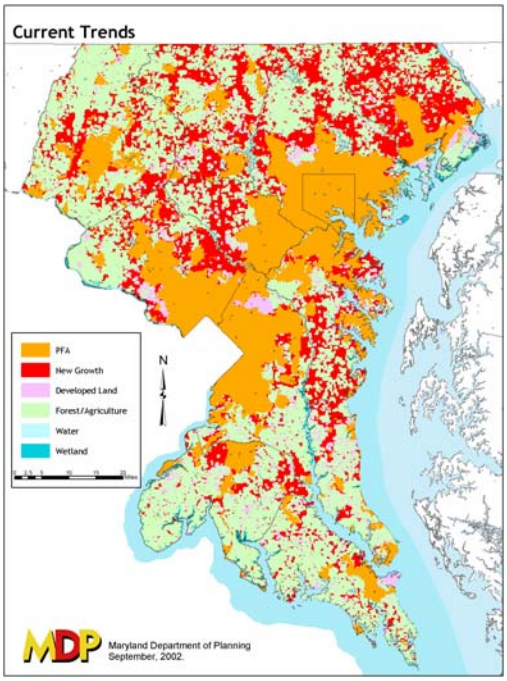
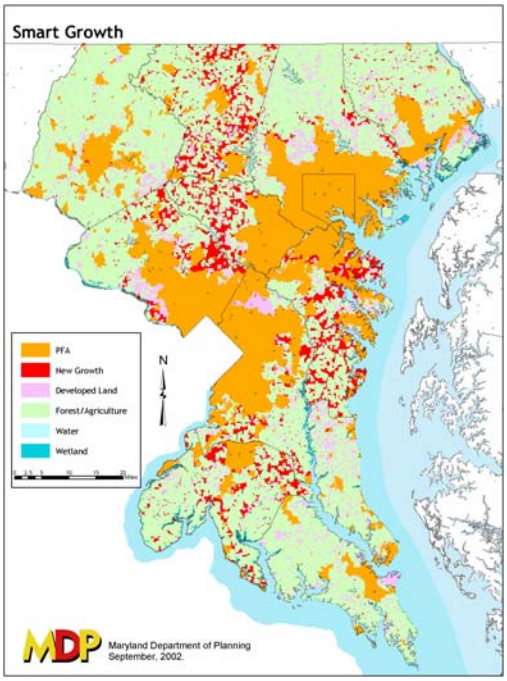
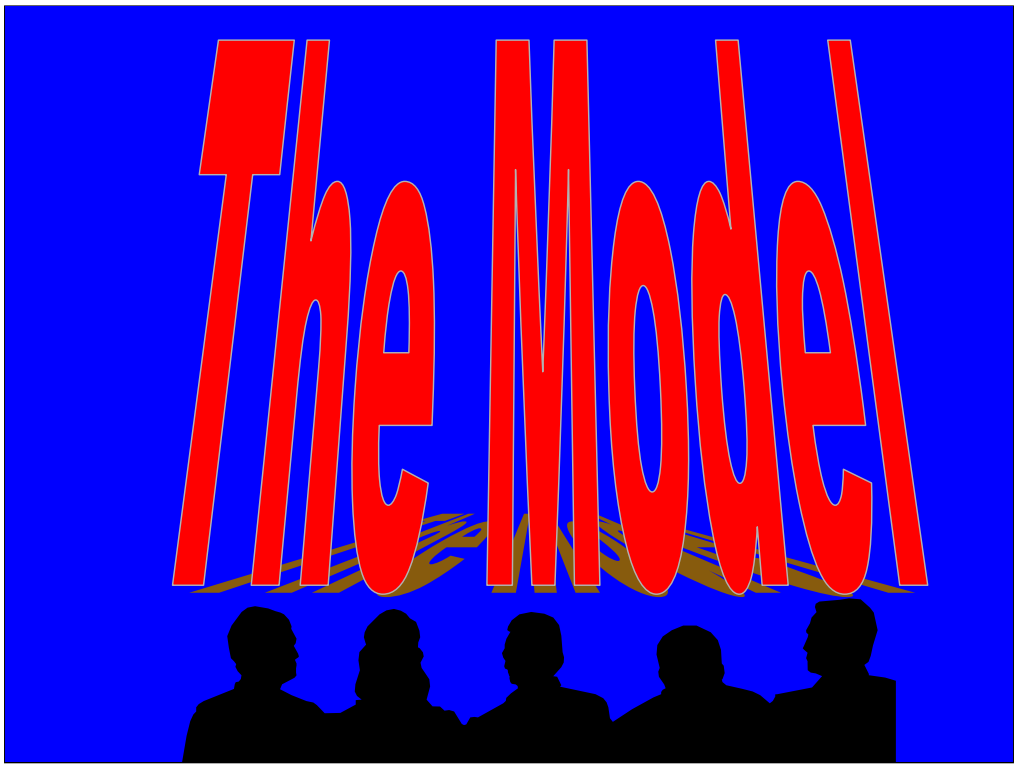
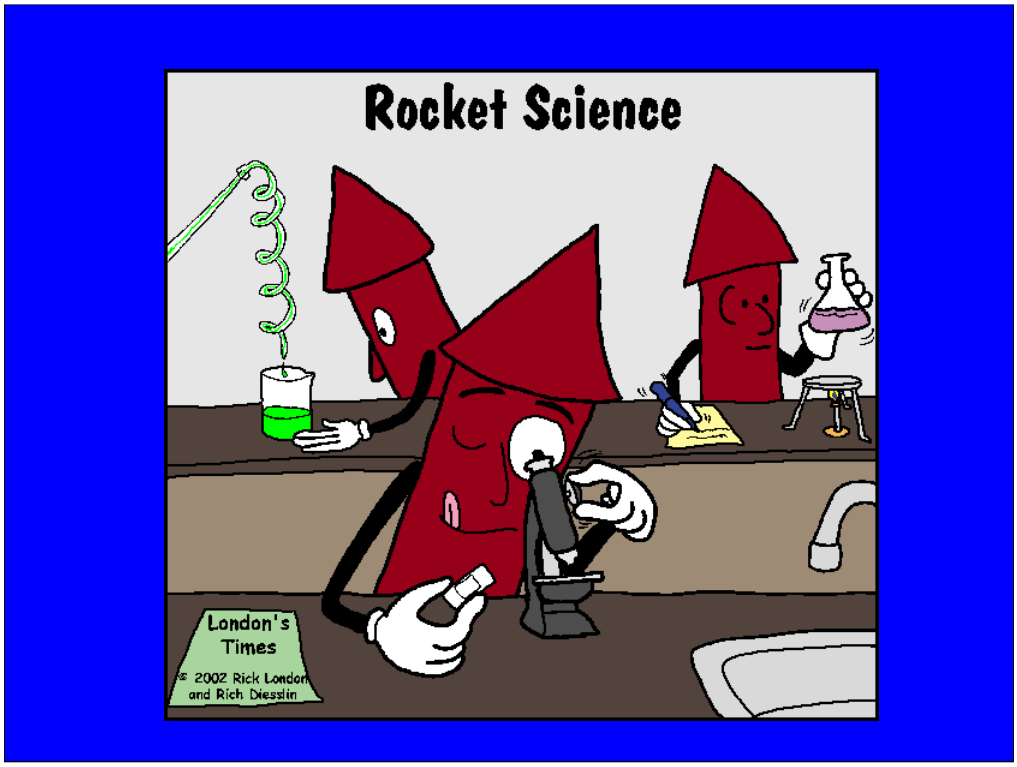
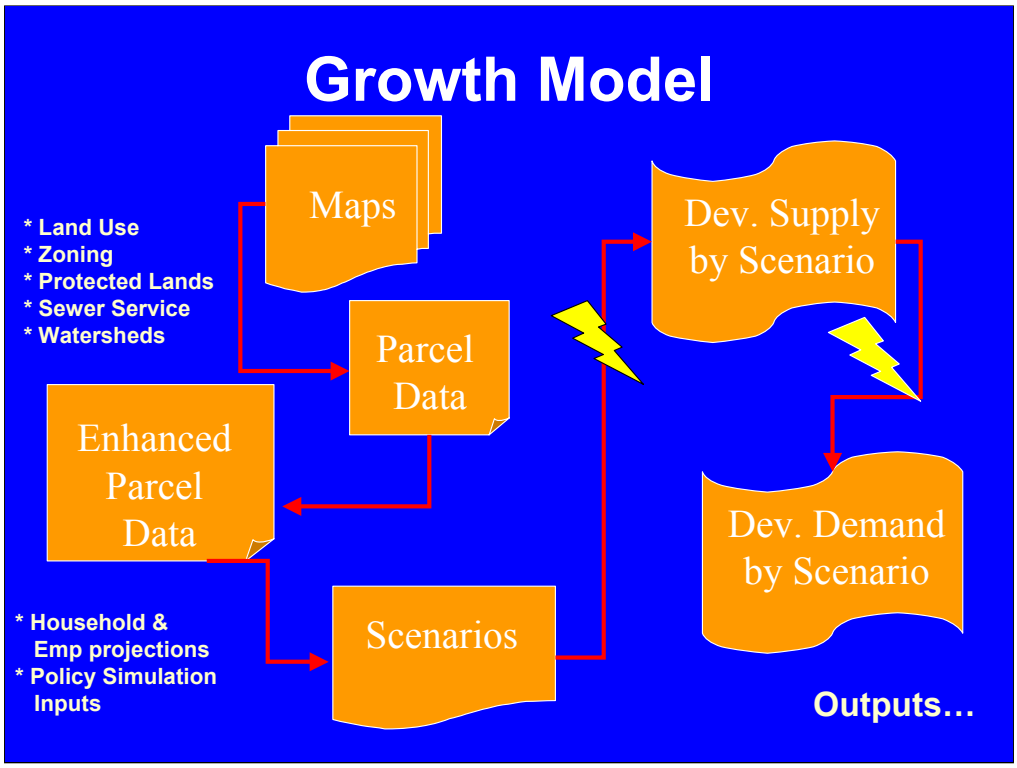
Where We're Headed?


Current Trends
PFA
New Growth
Developed Land
Forest/Agriculture
Water
Wetland
N
MDP
Maryland Department of Planning
September, 2002.


Smart Growth
PFA
New Growth
Developed Land
Forest/Agriculture
Water
Wetland
N
MDP
Maryland Department of Planning
September, 2002.


The Model


Rocket Science
London's Times
© 2002 Rick London and Rich Diesslin


Growth Model
* Land Use
* Zoning
* Protected Lands
* Sewer Service
* Watersheds
Maps
Parcel Data
Enhanced Parcel Data
* Household & Emp projections
* Policy Simulation Inputs
Scenarios
Dev. Supply by Scenario
Dev. Demand by Scenario
Outputs…

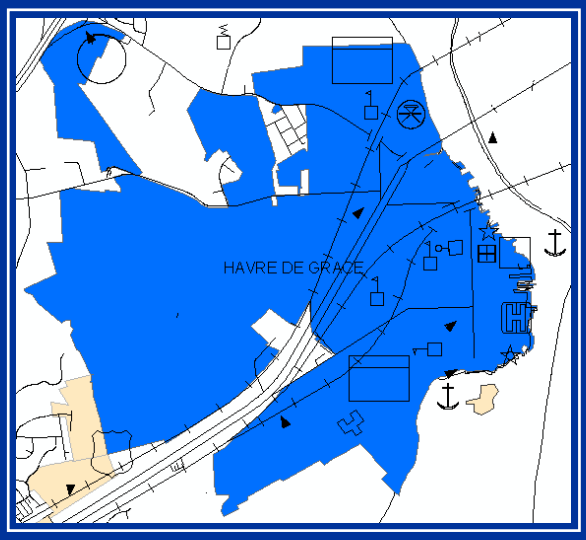
What goes into this work?

- MD PropertyView (parcel data)
- Aerial Photography
- Partnerships with Local Govs to get Data
- Data Development, Refinement, and Updating
- Geo-processing and Programming
- Growth Modeling
- State and Local Gov Planning Expertise
- Local Knowledge and Ground-truthing
- Hardware, Software, Training

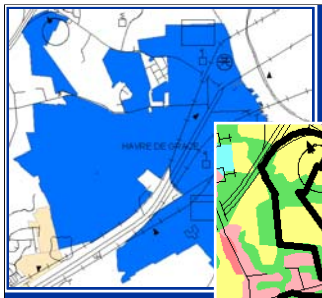
MDP's Approach Does Not Account For:

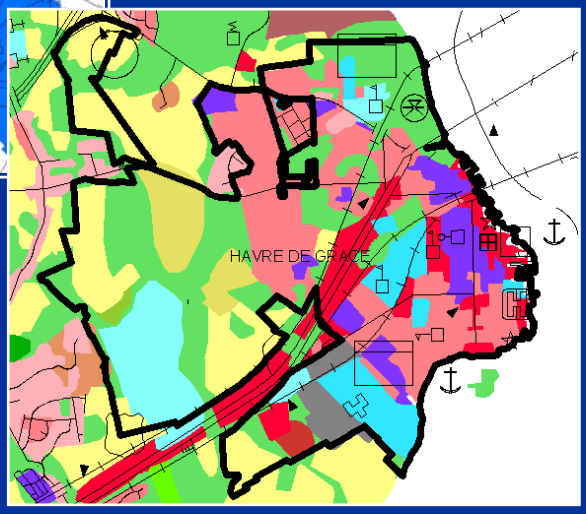
- Infrastructure capacity or permitting (APFO considerations);
- Much in the way of market considerations;
- All environmental constraints; nor
- NIMBYs.

Define Study Area

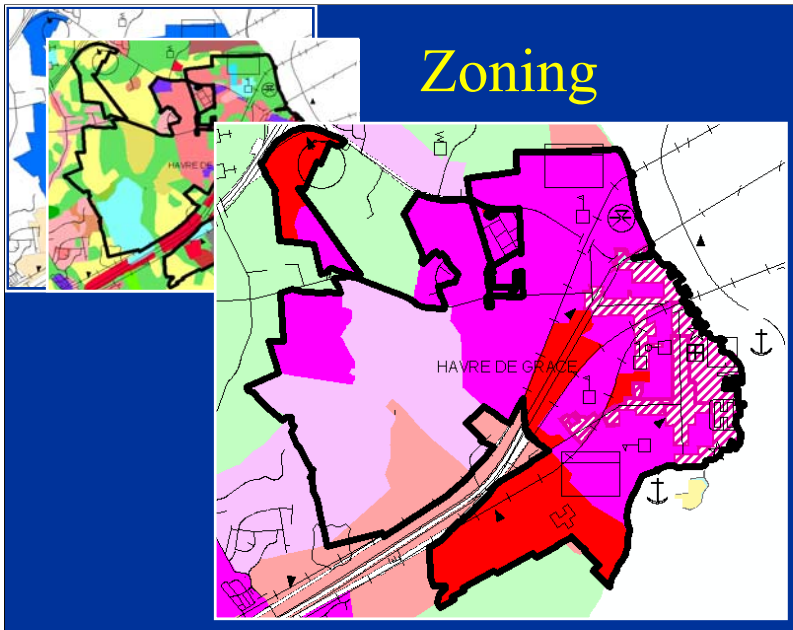


Land Use

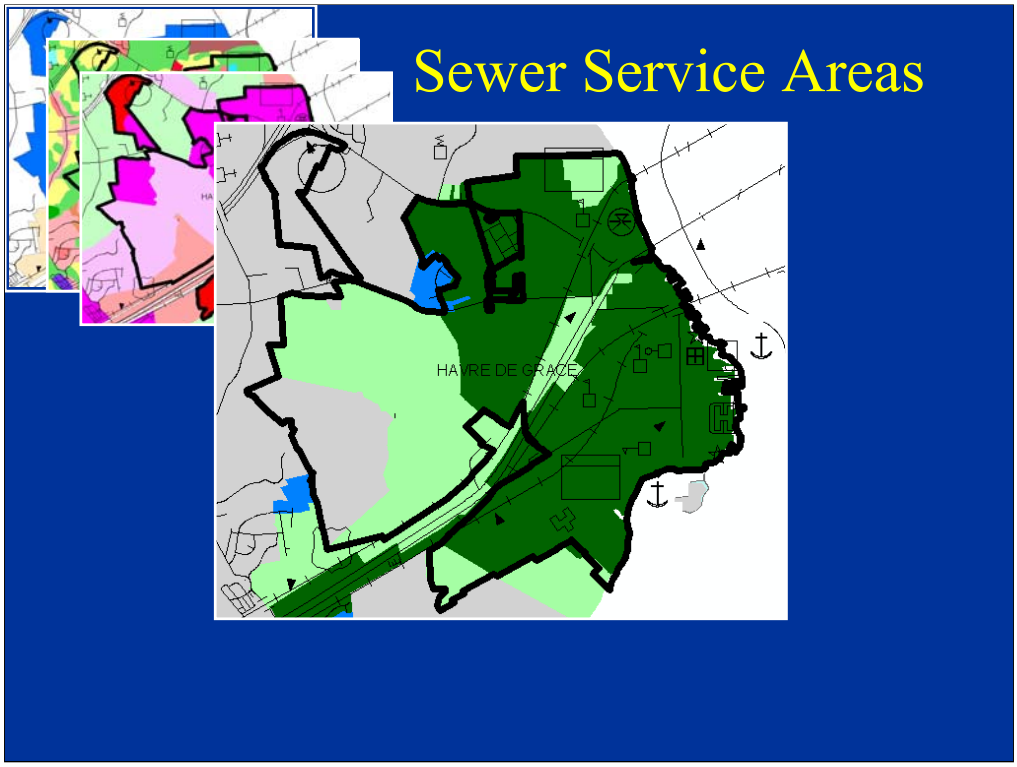




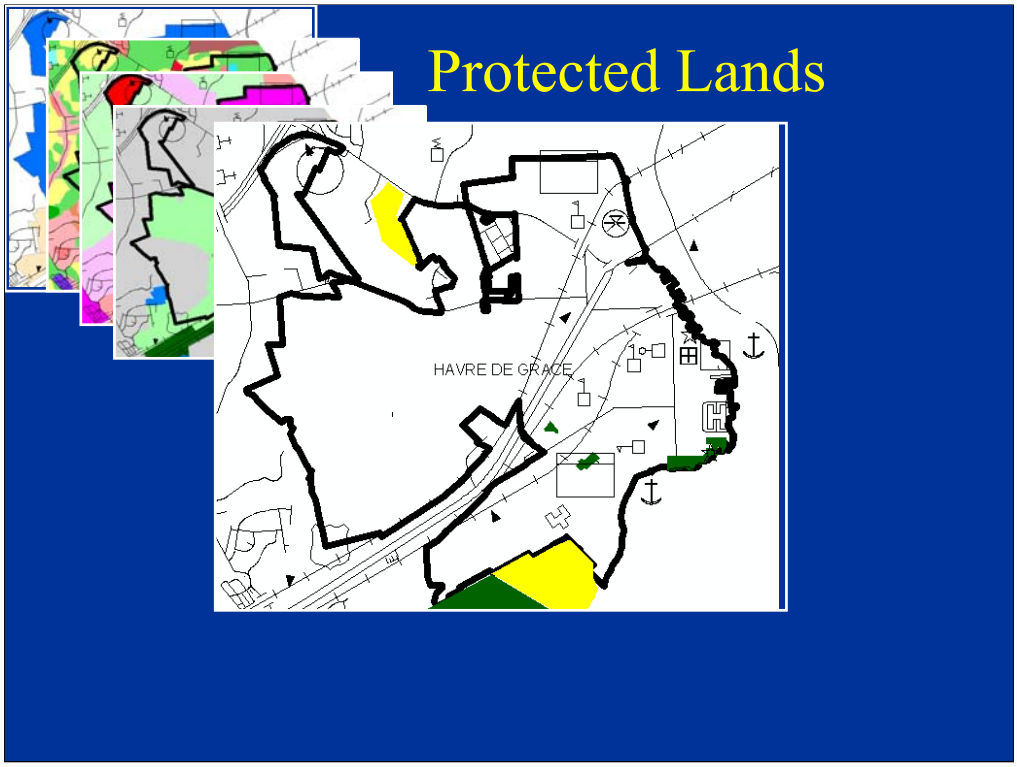
Zoning



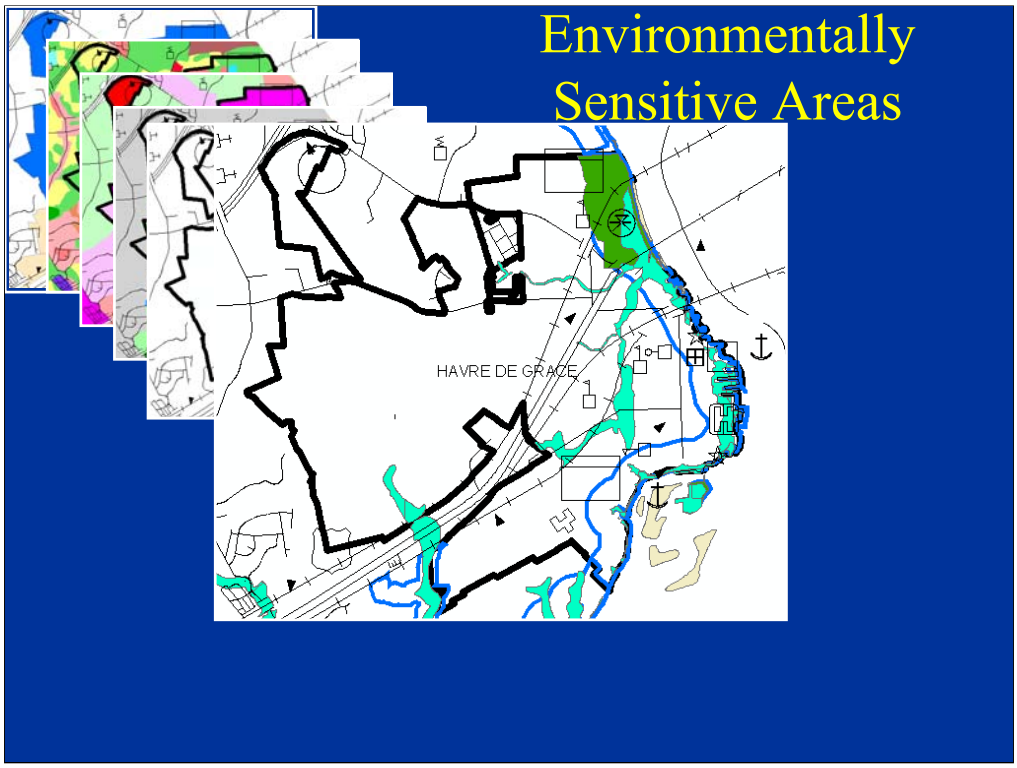
Sewer Service Areas

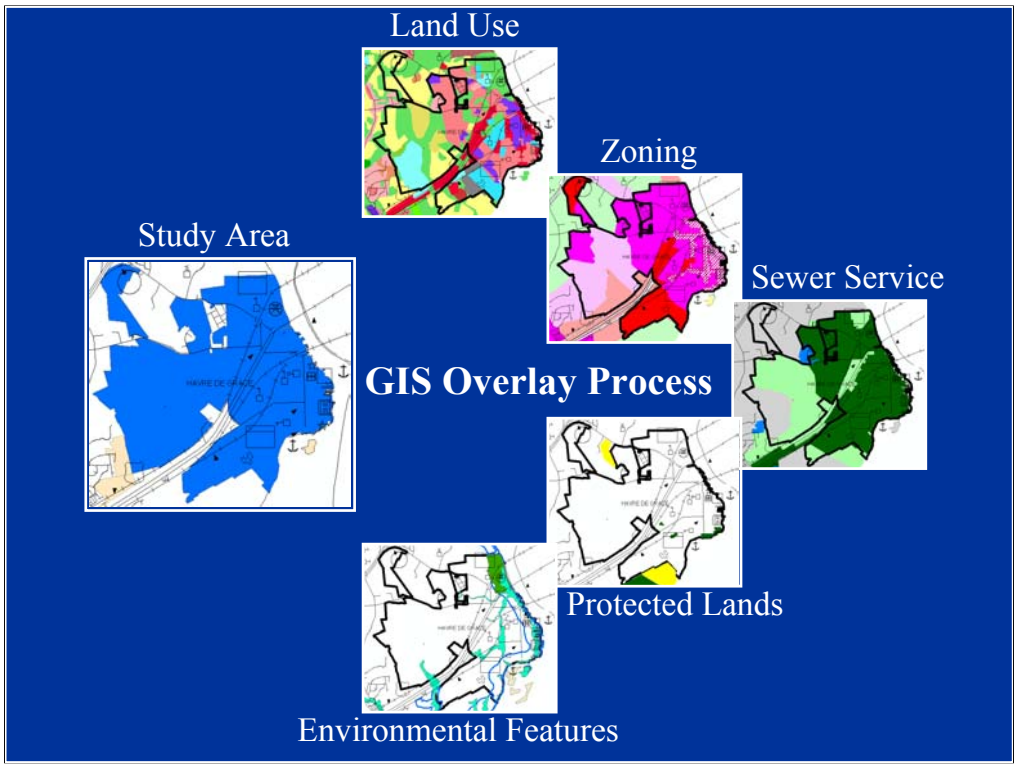


Protected Lands



Environmentally Sensitive Areas

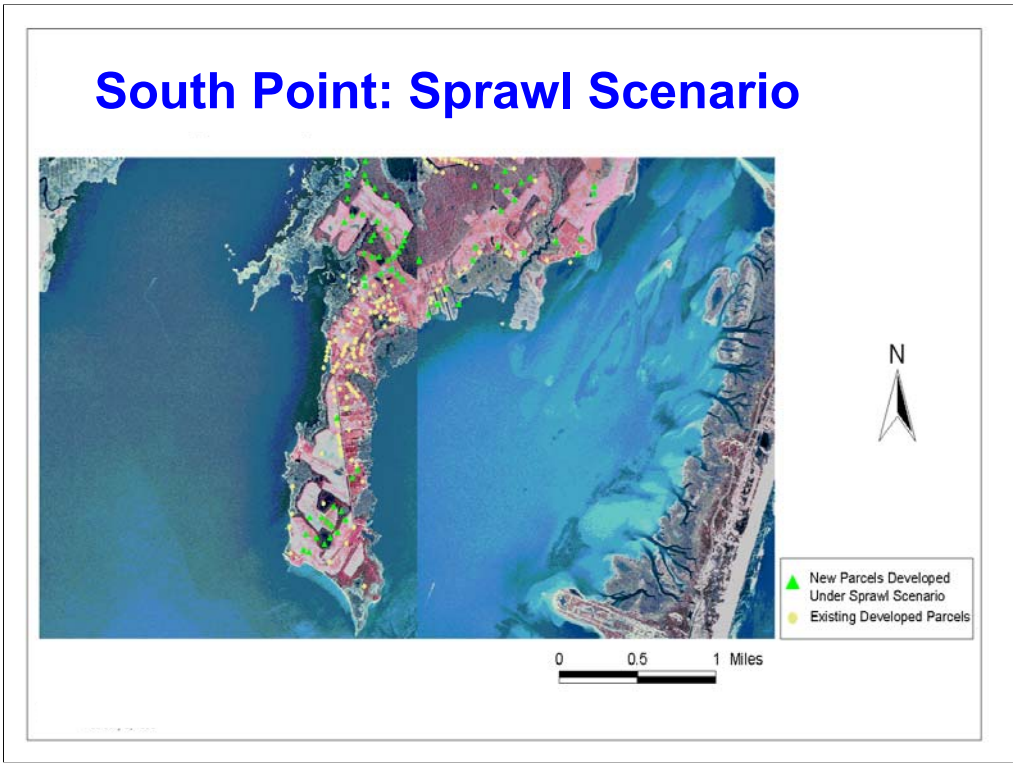



Land Use
Zoning
Study Area
Sewer Service
GIS Overlay Process
Protected Lands
Environmental Features

Maryland Coastal Bays
Alternative Futures Project

Example of sprawl development

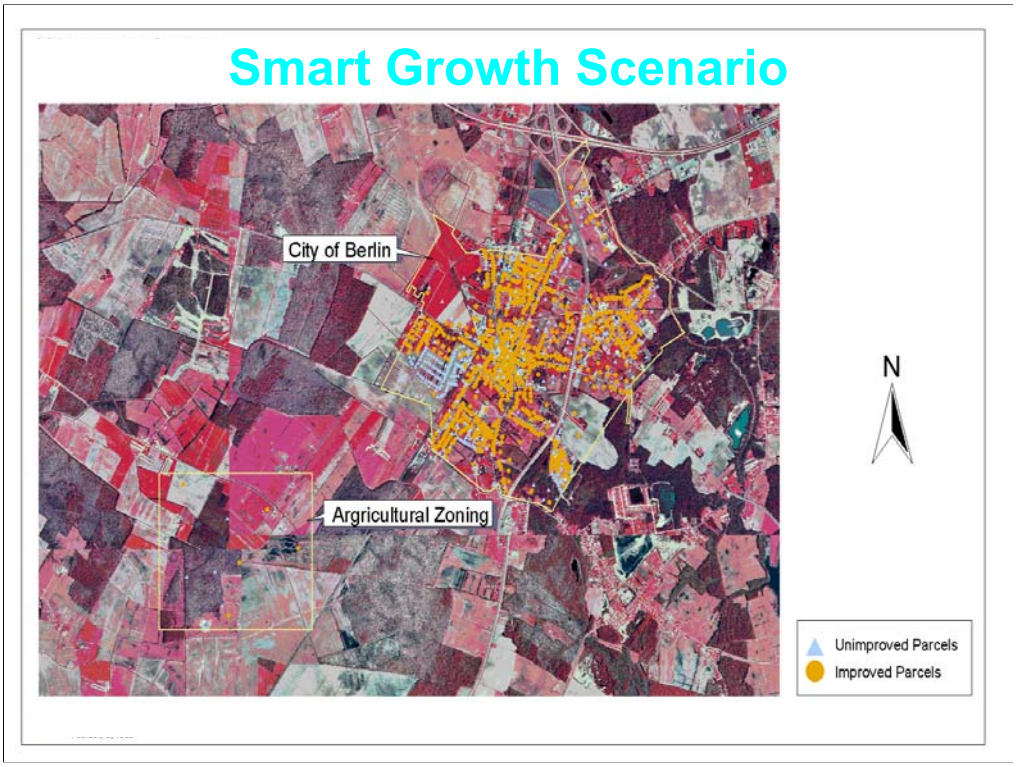
South Point



Existing developed parcels in yellow, projected to develop under the Sprawl Scenario are in green.

South Point (on the ground)

½ to 3 acre lots



This air photo shows the Berlin area, with the town's developed and undeveloped parcel points highlighted. The town is mostly surrounded by the County ag zone. Note how development basically stops at the edge of town, forming an edge, as opposed to tapering off into the rural area. This is a good thing.

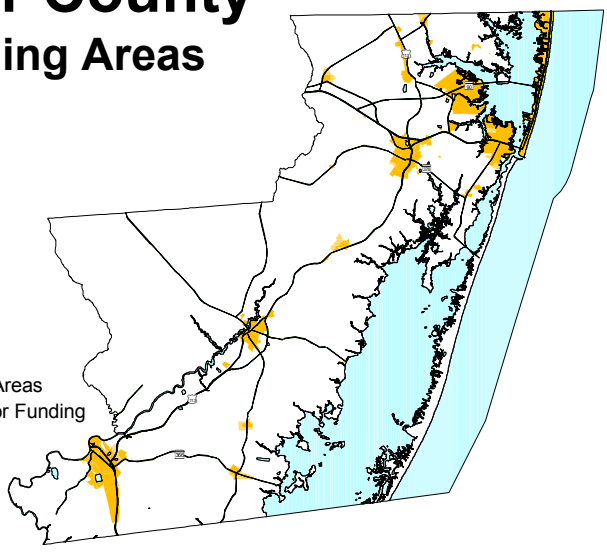
Berlin: on the ground

Pic simply showing the town. The pic on the lower right is new construction in the town.

South of Berlin

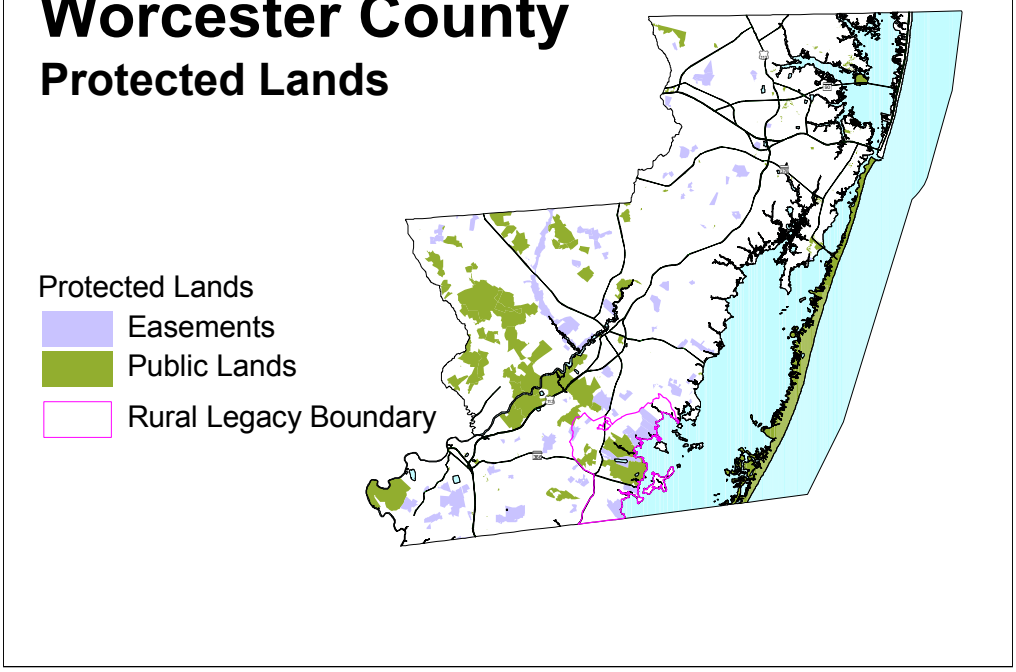
These two pictures illustrate the “edge” effect in Berlin. The top shows the southern edge of the town and how it stops at the agricultural land. The bottom pic shows another large farm just south of town.

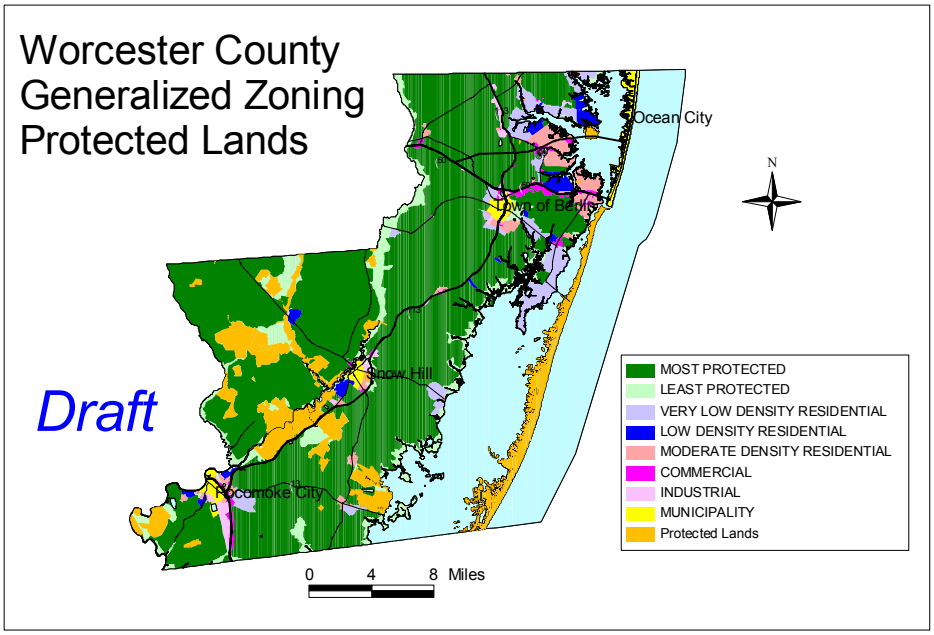
Worcester County
Priority Funding Areas

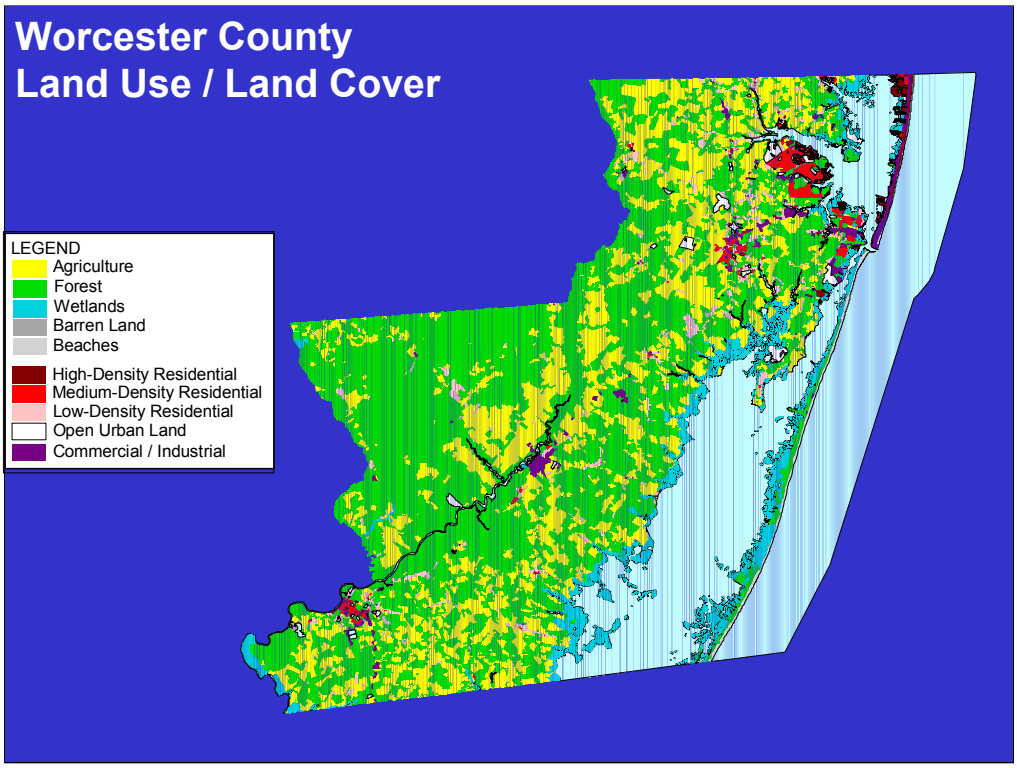


County Certified Priority Funding Areas
Compliance Area/Eligible for Funding
Area Not Meeting Criteria

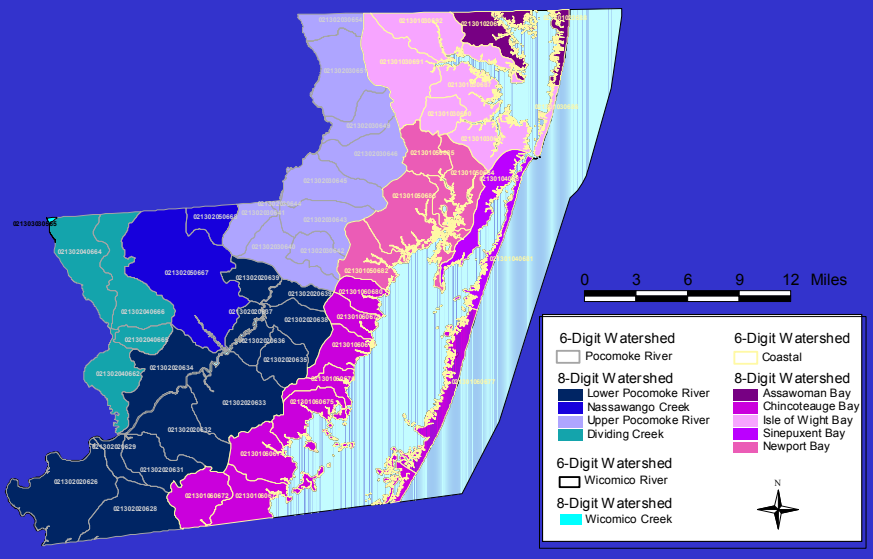
Worcester County
Protected Lands

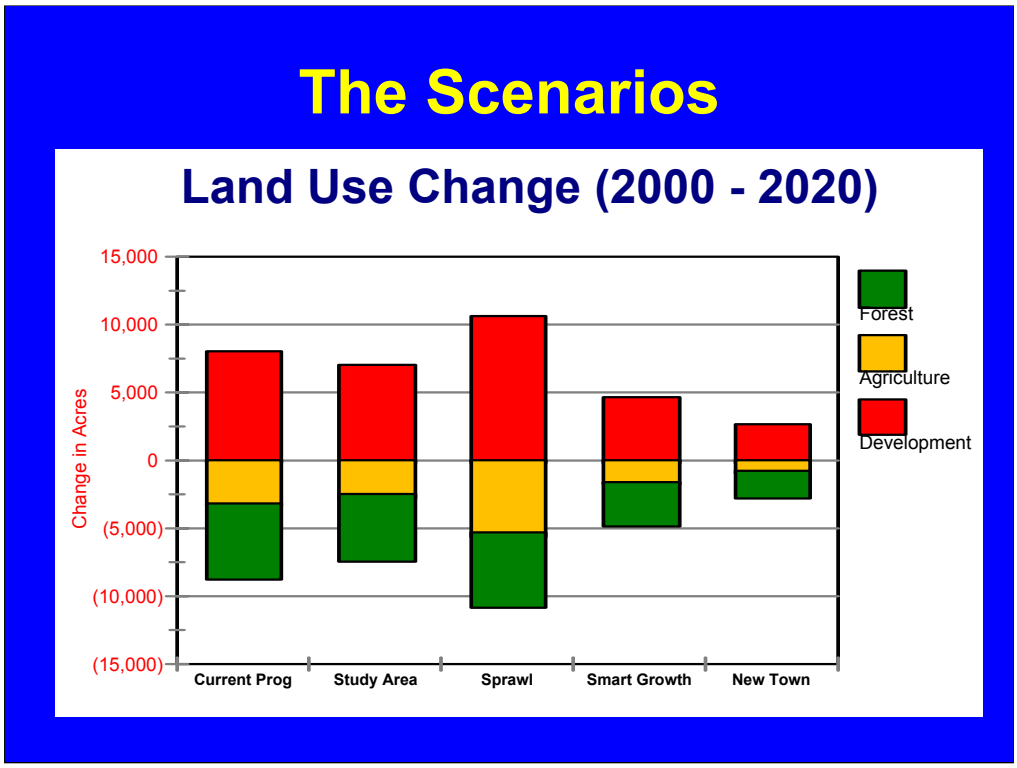



Worcester County
Generalized Zoning
Protected Lands
Draft
Ocean City
Town of Berlin
Snow Hill
Pocomoke City
N
MOST PROTECTED
LEAST PROTECTED
VERY LOW DENSITY RESIDENTIAL
LOW DENSITY RESIDENTIAL
MODERATE DENSITY RESIDENTIAL
COMMERCIAL
INDUSTRIAL
MUNICIPALITY
Protected Lands
0 4 8 Miles

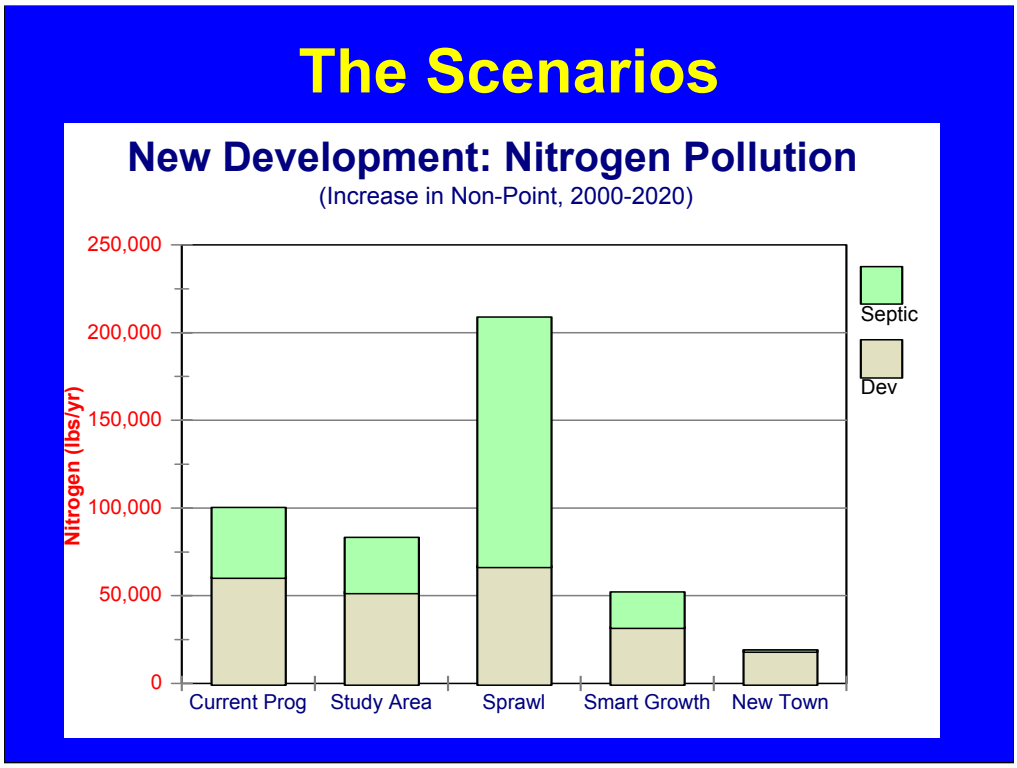

Worcester County
Land Use / Land Cover
LEGEND
Agriculture
Forest
Wetlands
Barren Land
Beaches
High-Density Residential
Medium-Density Residential
Low-Density Residential
Open Urban Land
Commercial / Industrial

Worcester County
Watershed Boundaries





This bar chart shows CHANGE in land use projected to 2020. All 5 scenarios accommodated the same amount of development, just differently. Red is new development, green is loss of forest land, yellow is loss of agri land. While the New Town scenario showed the least amount land consumed for development, it is the most hypothetical scenario.



Again, the New Town looks "best", but it probably isn't too likely to happen, at least not completely the way it was modeled. It has no septic load because all new development would be on sewer. This graph only shows nonpoint source nitrogen. However, septic systems pollute much more per household then most of the sewer systems that are or will be in place in the County.

Does anyone but us think our analysis is worth a #&%$?

- Development Capacity Task Force
- Requests for technical assistance
- Use in programmatic responsibilities
- Requests for the “model?”

If you're crazy enough to try this...

- Do your own
- Work with us...
- Either way, will need to account for:
  - existing growth;
  - future growth; and
  - land use and water quality impacts.
- Need accepted loading rates for land use categories and septic systems.